

Amendments to the Specification

Please amend the paragraph beginning at page 2, line 9 as follows:

As the refrigerant for the refrigerating cycle, a ~~flecn~~freon refrigerant including a substitute ~~flecn~~freon has been used extensively. But developments are being made to replace it with CO₂ considering the global environment in these years. A refrigerating cycle using CO₂ as the refrigerant has a very high inner pressure in comparison with the refrigerating cycle using a ~~flecn~~freon refrigerant, and particularly a pressure on a high-pressure side happens to exceed the critical point of the refrigerant depending on use conditions such as a temperature. The critical point is a limit on the high-pressure side (namely, a limit on a high-temperature side) in a state that a gas layer and a liquid layer coexist and is an end point at one end of a vapor pressure curve. A pressure, a temperature and a density at the critical point become a critical pressure, a critical temperature and a critical density, respectively. Especially, when the pressure exceeds the critical point of the refrigerant in a radiator of the refrigerating cycle, the refrigerant does not condensate. This type of supercritical refrigerating cycle is mounted on, for example, an automobile and used for air conditioning of the car interior.

Please amend the paragraph beginning at page 3, line 14 as follows:

The supercritical refrigerating cycle has a pressure resistance performance which is quite different from the conventional refrigerating cycle using the ~~flecn~~freon refrigerant, and the compressor for the supercritical refrigerating cycle has

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been also demanded to have a more outstanding structure considering its pressure resistance performance and the like.

Please amend the paragraph beginning at page 4, line 8 as follows:

Besides, for the supercritical refrigerating cycle, the compressor, which is operated by the power of a motor vehicle engine, is important to secure a startup property when the driving engine is started. In other words, when this compressor is compared with a compressor of the refrigerating cycle using a ~~fleon~~freon refrigerant, the cylinder capacity becomes relatively small because of a problem of pressure resistance. Therefore, an influence of the leakage of the refrigerant at the suction valve or the discharge valve is conspicuous and the seat surfaces of the valve body and the valve seat also become small. And, there are problems that the lubricating oil which enters between them becomes rather insufficient, and good opening and closing operations of the valve body are hardly secured. And, a seat failure due to such a shortage of the oil becomes a cause of delaying the generation of suction and discharge actions of the refrigerant from particularly a pressure-balanced state (with a very small flow rate of the refrigerant). Thus, it is presumed that with the existing compressor, the number of rotations on startup, namely the number of rotations of the swash plate when the refrigerant is started to be compressed, is larger than it is required.

Please amend the paragraph beginning at page 5, line 8 as follows:

Especially, with the supercritical refrigerating cycle, the refrigerant has a pressure of about 7.2 MPa in an atmosphere

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of 30°C. when the compressor is actuated. On the contrary, with the refrigerating cycle using a ~~fle~~on~~freon~~ refrigerant, the refrigerant has a pressure of about 0.67 MPa in an atmosphere of 30°C. when the compressor is ~~actuated~~actuated. Therefore, the compressor of the supercritical refrigerating cycle secures a high pressure resistance by setting the cylinder capacity and the port opening area small. Generally, the compressor of the supercritical refrigerating cycle has a cylinder with a bore diameter of 15.0 to 21.0 mm, a capacity of 20 to 33 cm³, and a suction valve and a discharge valve with a port's opening area of 7.0 to 29.0 mm². On the contrary, the compressor of the refrigerating cycle using the ~~fle~~on~~freon~~ refrigerant has a cylinder with a bore diameter of 32 to 40 mm, a capacity of 90 cm³ to 170 cm³, and a suction valve and a discharge valve with a port's opening area of 38.5 to 113.0 mm².

Please amend the paragraph beginning at page 15, line 26 as follows:

Further, when the compressor of the supercritical refrigerating cycle and the compressor of the refrigerating cycle using the ~~fle~~on~~freon~~ refrigerant have the same machining accuracy for the cylinder and the piston, the supercritical refrigerating cycle has a relatively large gap between the cylinder and the piston with respect to the cylinder capacity when the piston reaches the top dead center. This is also one of the causes to increase the number of rotations at the time of actuation of the supercritical refrigerating cycle.

Please amend the paragraph beginning at page 17, line 8 as follows:

The inventors of the present invention have repeated comparative experiments about the number of rotations on startup under different conditions on the swash plate type variable capacity compressor 10 of this embodiment and one with its cylinder-side valve body plate 151 changed. The changed cylinder-side valve body plate has a flat shape, and the valve bodies 152 of the suction valve 150 are not press-contacted in an elastically deformed state against the surface of the valve plate 140 as valve seats of the suction ports 141. As a result, the number (rate) of rotations of the swash plate type variable capacity compressor 10 of this embodiment at the time of actuation was in a range of 30 to 70% of that at the time of actuation of one with the cylinder-side valve body plate 151 changed. For example, when a swash plate type variable capacity compressor, which has the valve bodies of the suction valve not press-contacted in an elastically deformed state against the valve seats and has the number (rate) of rotations of about 700 rpm at the time of actuation, is structured with the valve bodies changed and press-contacted to the valve seats in a slightly elastically deformed state, the number of rotations at the time of actuation was decreased to about 300 rpm. FIG. 9 is a comparative graph of the number of rotations (i.e., rates of rotation) on startup before and after the exchange of the valve bodies of the suction valve, namely before and after the improvement. According to the experiment, the swash plate type variable capacity compressor 10 of this embodiment was proved that the number of rotations of the swash plate when the refrigerant was started to be compressed was decreased securely.